

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims

Claim 1 (canceled)

Claim 2 (currently amended): A method for diagnosing disease in a female subject using an experimental sample derived from said subject comprising:

selecting reference samples of known disease state that is are matched to said experimental sample in reproductive state;

comparing the expression profile of said experimental sample to the expression profiles of said reference samples to identify the reference sample that matches said experimental sample in gene expression; and

diagnosing the experimental sample with the disease of the matching reference sample.

Claim 3 (canceled)

Claim 4 (currently amended): A method to diagnose physiological disorders in a female comprising:

comparing a gene expression profile from an experimental sample to a gene expression profile that represents an average of a plurality of reference samples wherein all of the reference samples in the plurality share at least one indicator of reproductive status in common and wherein each of the reference samples in the plurality have been diagnosed with the same physiological disorder and wherein the experimental sample also shares the at least one indicator of reproductive status with matching indicators of reproductive status; and

diagnosing the experimental sample with the physiological disorder if the gene expression profile of the experimental sample is similar to the gene expression profile

~~that represents an average of a plurality of reference samples using said profile information to diagnose physiological disorders.~~

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Claim 5 (currently amended): A method to identify the reproductive status of a sample derived from a female comprising:

generating an expression profile from the experimental sample, and comparing said expression profile from the experimental sample to a plurality of expression profiles from samples of known reproductive state status; and

identifying said physiological reproductive status of said sample of unknown origin using said expression profile by identifying an expression profile of known reproductive status that is similar to the expression profile from the experimental sample.

Claim 6 (currently amended): A method to identify markers of different reproductive states in women comprising:

obtaining a first gene expression profile matching from a sample from a first physiological reproductive state and a second gene expression profile from to a sample from a second physiological reproductive state;

comparing the expression profiles from said first and second physiological reproductive states;

identifying genes that are differentially expressed in said first and second reproductive states; and

using the identifying at least one gene that is differentially expressed between the first and second reproductive states as a marker expression profile data to identify markers of different physiological reproductive states in women humans.

Claims 7-9 (canceled)